Annulus Vent Gas Monitoring
Reduce your flexible riser costs with AMOS™

**AMOS™** provides safe and cost-effective operation of flexible risers. The system monitors the riser annulus diffusion rate, detecting early signs of riser failure, reducing risk and averting potential costly replacement of risers. The results are safe operations, improved decision making as well as reduced cost.

4Subsea offers products, services, and software related to flexible pipes, umbilicals, and ancillaries used for subsea operations. The FlexCare™ Integrity Management service contains Annulus Vent Gas Monitoring (AMOS™), Portable Annulus Tester (PAT™), Riser Repair Clamp (EPIC™), Flex-Track™, FlexIns™, and Untethered Pipe Inspection Tool (UPIT™).

**KEY BENEFITS**
- Reduces risk of production downtime
- Provides early warning in case of anomalies
- Performs free annulus volume measurements
- Provides real-time condition monitoring of riser
- Integrates to central control room
- Ensures installation without operational downtime
- Includes simple to use touch-screen interface
- Gives access to the 4Subsea experts’ extensive experience and knowledge base
- Can be tailormade to customer specifications
AMOS™ Annulus Vent Gas Monitoring

AMOS™ is a continuous annulus monitoring system for new and existing (retrofit) flexible risers. It uses a patent pending method to detect failures such as outer sheath damages and blocked ventilation ports early on, hence preventing costly replacements, shutdowns and accidents. AMOS™ also provides the option of automated annulus free volume testing as well as automated nitrogen annulus testing. 4Subsea has installed several AMOS™ units for major oil and gas operators since the system became commercially available in 2013. Click here to watch AMOS™ demonstration video.

Application of AMOS™

- Failure mode detection
- Life extension studies
- Operational data reviews
- Integrity evaluations
- Annulus test reports
- Ventilation port capacity tests
- Post-installation testing
- Risk-mitigating actions

Specifications

- Stainless steel (SS 316) or glass reinforced plastic enclosure
- Control module dimensions for standalone system (SS 316): 400x300x200mm, 15 kg
- Instrument module dimensions (SS 316): 800x600x300, 65 kg
- Design flow rate capacity in operation: 0 - 300 Ndm³ / hr
- Flow rate capacity through relief valve: ~9000 Ndm³ / hr @ 1.7 barg
- Operating pressure range -1 - 3.5 barg
- Design pressure: 20 barg
- Mechanical relief valve release pressure: 1.0 - 3.5 barg
- Environmental protection rating: IP 65
- Ambient temperature range: -10°C ≤ Ta ≤ +40°C
- Minimum system accuracy: ± 10%
- Power rating standalone system: 100 VAC ... 240 VAC, 300W, 45 Hz ... 65 Hz
- Storage capacity for several years of data sampling
- Ex rating instrument module:
  - Ex II 2 G Ex db e mb IIC T4, -10°C ≤ Ta ≤ +55°C
- Ex rating control module:
  - Ex II 3 G Ex d e nA mb nC IIC T4, -10°C ≤ Ta ≤ +40°C

4Subsea is a Norwegian technology company specialised in production riser systems and subsea well systems. We deliver solutions to maintain production from subsea oil and gas fields, enabling cost reduction and increased service life of existing installations. We also provide our specialist services within offshore wind turbines and wave power systems.

4Subsea combines expert knowledge and practical experience with software and instrumentation to optimise operation of production risers and subsea wells, aiming to be in the forefront of digitising the oil and gas industry.

The company was established in 2007, and clients include all the major oil and gas operators as well as the large suppliers of subsea equipment. 4Subsea has offices in Asker (near Oslo), Bergen and Kristiansand.

4Subsea - Share ideas, move forward